Curriculum Vitae

Yulun Wu

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Education

2020-2024 **PhD in Geography**
University of Ottawa, Ottawa, ON, Canada
Thesis: *Modelling and correcting for the adjacency effect in remote sensing of coastal and inland waters*
Supervisor: Dr. Anders Jensen Knudby

2014-2019 **Honours Bachelor of Science in Environmental Science (Co-op)**
University of Ottawa, Ottawa, ON, Canada
Honours Thesis: *The spatial distribution of arsenic and other trace metal contaminants and their acute toxicity to Daphnia pulex in lakes near the Giant Mine in Yellowknife, Canada*
Supervisor: Dr. Jules M. Blais

Research Interests

Coastal remote sensing; atmospheric correction; ocean optics; aerosols; planetary science; radiative transfer; geospatial analysis.

Professional Experience

2024-Present	Remote Sensing and Field Technician, WSP Canada Inc., Montreal
2021-Present	Lab Coordinator, Shallow Water Earth Observation Lab, University of Ottawa
2022-2023	Assistant Ecologist, Office of the Chief Ecosystem Scientist, Parks Canada
2022	Remote Sensing Technician, Liquid Geomatics, Ottawa
2021	Field Technician, Fluvial Systems Research Inc., Vancouver
2020-2024	Remote Sensing Researcher, Agriculture and Agri-Food Canada, Ottawa
2020-2022	Research Assistant, Network on Coastal, Oceans and Lake Optics Remote Sensing (NetCOLOR)
2018-2020	Spatial Analyst (Co-op), Ottawa Neighbourhood Study, University of Ottawa
2018	Assistant Librarian (Co-op), Ottawa Hospital Research Institute, Ottawa
2017	Research Assistant (Co-op), Macroecology Lab, Department of Biology, University of Ottawa

Teaching Experience

Winter 2025 **Course Instructor**
GEG3105 *Earth Observation*
University of Ottawa

2023-2024 **Guest Lecturer**
GEG4104 *Methodological and Theoretical Approaches in Geography and Environmental Studies* and GEG3105 *Earth Observation*
University of Ottawa

2021-2023 **Teaching Assistant**
MAT1371 *Descriptive Statistics*, GEG3305 *Geographies of Globalization*, GEG4702 *Le développement des villes*, ENV1101 *Global Environmental Challenges*, GEG3114 *Biogeography*, and BIO2129 *Ecology* (in chronological order)
University of Ottawa

Publications

Peer reviewed

Wu, Y., Knudby, A., Pahlevan, N., Lapen, D., & Zeng, C. (2024). Sensor-generic adjacency-effect correction for remote sensing of coastal and inland waters. *Remote Sensing of Environment*, *315*, 114433. https://doi.org/10.1016/j.rse.2024.114433

Richardson, G., Foreman, N., Knudby, A., **Wu, Y.**, & Lin, Y. (2024). Global deep learning model for delineation of optically shallow and optically deep water in Sentinel-2 imagery. *Remote Sensing of Environment, 311*, 114302. https://doi.org/10.1016/j.rse.2024.114302

Richardson, G., Foreman, N., **Wu, Y.**, & Knudby, A. (2024). Global Delineation of Optically Shallow and Optically Deep Water Using Machine Learning. IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, 6010–6013. https://doi.org/10.1109/IGARSS53475.2024.10641668

Wu, Y., & Knudby, A. (2023). A Tool That Calculates the Sea-Surface Reflectance Factor in Customized Environments and Geometry. *IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium*, 464–467. https://doi.org/10.1109/IGARSS52108.2023.10282740

Wu, Y., Knudby, A., & Lapen, D. (2023). Topography-adjusted Monte Carlo simulation of the adjacency effect in remote sensing of coastal and inland waters. *Journal of Quantitative Spectroscopy and Radiative Transfer*, 108589. https://doi.org/10.1016/j.jqsrt.2023.108589

Non-peer reviewed

Wu, Y. (2022). T-Mart Radiative Transfer Code and Documentation. https://tmart-rtm.github.io

Wu, Y. (2021). Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters [Report in fulfillment of the requirement for fast-tracking into a PhD program]. University of Ottawa.

Wu, Y. (2020, September). Social Distancing: Easy in a Kayak Surrounded by Instruments – Collection of Remote Sensing Reflectance in Rivers. *Geography, Environment and Geomatics Newsletter*. https://arts.uottawa.ca/geography/geg-env-newsletter

Wu, Y., Cheney, C., & Blais, J. M. (2019). The spatial distribution of arsenic and other trace metal contaminants and their acute toxicity to Daphnia pulex in lakes near the Giant Mine in Yellowknife NWT [Honours Thesis]. University of Ottawa.

Awards & Scholarships

2024	Association of Professors of the University of Ottawa Award ($1,500)
2022-2023	Ontario Graduate Scholarship for International Students ($15,000)
2021-2025	PhD Admission Scholarship, University of Ottawa ($78,500)
2021-2022	Student Experience Fund, University of Ottawa ($1,000)
2021	BMO Financial Group Graduate Bursaries ($4,000)
2020-2021	uOttawa International Graduate Bursary, University of Ottawa ($4,000)
2020-2021	Suzanne Gratton-Sarrazin Scholarship, University of Ottawa ($2,050)
2019	Roger Guindon Scholarship Fund ($1,000)
2019	Gilles G. Patry Community Engagement Scholarship ($1,000)
2018	J. P. Bickell Foundation Mining Scholarship ($2,000)
2017-2023	uOttawa Financial Aid Bursary for International Students ($3,250)
2017-2019	Faculty of Science Dean's Honour List & Merit Scholarship, University of Ottawa ($3,000)
2017-2019	Science Students' Association International Student Scholarship, University of Ottawa ($1,000)
2017	Brian Rust Memorial Scholarship ($1,600)

Research Grant

2023-2024	Separation of optically deep and shallow water. *Big Idea Grant, University of Ottawa* ($20,000)

Service & Outreach

2024-Present	Manuscript reviewer: Journal of Hydrometeorology, Remote Sensing of Environment
2024-Present	Treasurer, Ottawa Chapter, Canadian Remote Sensing Society
2024	Hosted workshop: Building your first radiative transfer model through Monte Carlo. Shallow Water Earth Observation Lab, University of Ottawa (January 26).

2023 Provided mentorship to an early career researcher in developing and delivering a virtual presentation for the Geo AquaWatch Water Talks series (October-November).

2020-2023 Treasurer, Geography Graduate Student Association, University of Ottawa

Field Experience

Field Technician, smartHarbour project, WSP Canada Inc. Validation of satellite-derived reflectance and water properties. Satellites: S2, L8, L9, Wyvern Dragonette, and Pleiades.
St. Lawrence River, Montreal July-October, 2024 (14 days)

PhD thesis. Validation of satellite-derived reflectance and water properties. Satellites: S2, L8, and L9.
South Nation River and Ottawa River, Ottawa July-October, 2023 (6 days)

Field Technician, Parks Canada. Validation of aerial and satellite-derived distribution of coastal saltmarshes and eelgrass beds. Satellites: Worldview and PlanetScope series.
Sidney Island, British Columbia June 2022 (7 days)

Field Technician, Fluvial Systems Research Inc. Mapping water depth and fluvial sediment-size distribution to support ecosystem modelling of Walleye-fish habitats.
Waskaganish, Quebec November 2021 (4 days)

PhD thesis. Validation of satellite-derived reflectance and water properties. Satellites: S2 and L8.
South Nation River and Ottawa River, Ottawa August-October, 2020 (4 days)

Professional Training

NASA PACE Hackweek 2024 (August 4-8, 2024). University of Maryland, Baltimore County, the USA.

2022 International-Ocean-Colour-Coordinating-Group Summer Lecture Series (July 18-29, 2022). Institut de la Mer, de Villefranche, France.

International Fall School in Hydrographic Surveying (October 25-29, 2021). Laval University, Quebec City, Canada.

PHY2505 *Atmospheric Radiative Transfer and Remote Sounding* (Winter 2021, as an exchange student). Department of Physics, University of Toronto

Google Earth Engine Mini-Course (May 25-29, 2020). Carleton University, Ottawa, Canada.

Qualifications

Advanced operations certificate – small remotely piloted aircraft systems (PRAS)
Wilderness First Aid with CPR training
Canada pleasure craft operator card

WHIMS, radiation safety certifications
Ontario G driver's licence

Presentations

Wu, Y., & Knudby, A. (2024, June 13). *Adjacency Effect Modelling and Correction for Optical Remote Sensing of Inland and Coastal Waters*. 45th Canadian Symposium on Remote Sensing, Halifax, Nova Scotia, Canada.

Wu, Y., Knudby, A., Pahlevan, N., Lapen, D., Zeng, C., & Begeman, C. (2023, November 15). *Adjacency-effect correction in remote sensing of coastal and inland waters for Sentinel-2 MSI and Landsat-8 OLI imagery*. International Ocean Colour Science Meeting 2023, St. Petersburg, Florida, the USA.

Wu, Y., & Knudby, A. (2023, July 17). *A Tool That Calculates the Sea-Surface Reflectance Factor in Customized Environments and Geometry*. The International Geoscience and Remote Sensing Symposium 2023, Pasadena, California, the USA.

Wu, Y., Knudby, A., & Lapen, D. (2023, May 29). *Adjacency Effect Modelling and Correction for Remote Sensing of Inland and Coastal Waters*. The Canadian Meteorological and Oceanographic Society 57th Congress, St. John's, NL, Canada.

Wu, Y., & Knudby, A. (2022, February 28). *Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters*. Ocean Sciences Meeting 2022, Online. https://osm2022.secure-platform.com/a/gallery/rounds/3/details/5093

Wu, Y. (2021, May 7). *Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters*. Geography, Environment and Geomatics Graduate Student Conference, University of Ottawa.

Wu, Y. (2021, March 17). *Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters*. The 3rd National NetCOLOR Meeting, Université Laval.

Wu, Y. (2020, September 2). *Retrieval of remote sensing reflectance in the South Nation River, Ottawa*. NetCOLOR Communities-of-Practice Workshop, University of Ottawa.

Wu, Y. (2020, February 24). *Satellite derived water quality observations in inland waters*. Canadian Hydrographic Conference, Quebec City, Canada.

Wu, Y. (2020, February 11). *Remote sensing-based detection of point source pollution in Canadian waterways*. NetCOLOR Communities-of-Practice Workshop, University of Ottawa.

Wu, Y. (2019, November 6). *The use of satellite imagery to monitor inland water quality*. EVS4904 Environmental Science Seminar, University of Ottawa.

Wu, Y. (2019, October 9). *Remote sensing of seaweed in the Atlantic Ocean*. EVS4904 Environmental Science Seminar, University of Ottawa.

Wu, Y. (2019, April 8). *Lakes close to an abandoned gold mine continue to show hazardous metal(loid) concentrations for Daphnia pulex (water fleas) despite a decade of recovery* [Honours Thesis]. Poster Presentation, University of Ottawa.